

“CARPAL TUNNEL SYNDROME”

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Carpal Tunnel Syndrome is a common disorder which affects the hand and wrist. It is a painful, sometimes disabling, nerve compression syndrome. The most common symptoms of carpal tunnel syndrome are numbness and tingling in the fingers coinciding with an intermittent aching pain in the hand. The tingling or numbness often occurs at night, interfering with sleep. During the day, the hands can fall asleep while performing simple tasks such as driving or talking on the phone. As the syndrome progresses, muscles in the hand can weaken, causing a feeling of clumsiness or loss of strength.

The carpal tunnel is a narrow passage in the wrist in which the median nerve and tendons to the fingers travel. The median nerve is responsible for carrying sensations from the thumb, index finger, long finger and half of the ring finger. It also controls the muscles at the base of the thumb. When pressure is increased in this tunnel, the median nerve is squeezed, interrupting its normal function and causing it to send signals of pain to

the brain. Further pressure can lead to permanent damage.

It is not clearly understood why people develop carpal tunnel syndrome. The pressure in the carpal tunnel can be affected by certain rhythmic activities. Over time, repetitive motions cause the tendons to become inflamed or to swell, placing pressure on the median nerve. Computing, keyboarding and assembly line work are the most common culprits. Even a long day of painting can trigger the syndrome. Pregnancy, wrist fractures and certain medical conditions (thyroid problems, rheumatoid arthritis, kidney disease) can also be associated with carpal tunnel syndrome. Some patients develop the syndrome for unknown reasons.

Several tests are used to diagnose carpal tunnel syndrome. The most important; however, is a thorough history of the symptoms. The two tests used during examination of the hand are Tinel's and Phalen's test. The Tinel's test involves tapping the median nerve in the wrist. An inflamed nerve will respond with an electrical like sensation. The Phalen's test involves flexing the wrist for approximately one minute. Those patients with carpal tunnel syndrome will feel numbness or tingling. If there is any doubt to the diagnosis, the next step is an electromyogram (EMG). An EMG measures the amount and speed of electricity traveling through the nerve.

This test is often performed by a neurologist.

When carpal tunnel syndrome is diagnosed, several treatment options are available; braces, physical therapy, medication or cortisone injections. The brace may be worn at night to allow the nerve to rest and often this method of treatment is the most helpful. Physical therapy and medication have shown to be of little benefit with this condition. Some patients' symptoms may improve from a cortisone injection but this usually offers only temporary relief. When braces are no longer helpful, surgery may be considered.

A simple outpatient surgery is required to repair carpal tunnel syndrome. The newest technique involves the use of an arthroscope or a "mini" half inch incision. A small bandage is placed over the opening and the hand may be used within twenty-four hours. The bandage is removed in three to four days and regular work may be resumed in one to two weeks. Some residual soreness may remain for one to two months and it can take up to a year though to regain lost strength.

Patients do very well after surgery; the tingling resolves and the strength returns. It is very rare for carpal tunnel syndrome to recur. In the less fortunate cases, patients may have waited too long and have incurred permanent nerve damage. In these cases, sur-

gery can stop the continued nerve damage but the patient may not regain lost strength or feeling. At this point, the best option for treatment would be to consider a tendon transfer.

Michael Aron, MD has been a hand and upper extremity surgeon for 12 years. He is board certified in orthopedic surgery with an added qualification in surgery of the hand. Dr. Aron achieved his hand surgery fellowship at Thomas Jefferson University Hospital in Philadelphia, PA. He is currently an Associate Attending Staff Member of St. Francis Hospital and Medical Center and Assistant Clinical Professor at The University of Connecticut School of Medicine. Dr. Aron performs hundreds of carpal tunnel syndrome surgeries each year. He is partner and president of Greater Hartford Orthopedic Group.

